UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,293	01/25/2001	Yatin R. Acharya	F0682	3654

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ART UNIT	PAPER NUMBER
2157	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/768,293	ACHARYA, YATIN R.
	Examiner	**Art Unit**	
	Salad E Abdullahi	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 July 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-18</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-18</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

Response

1.   The response filed on 7/9/2004 has been received and made of record.

2.   applicant's argument with respect to claims 1-18 have been considered but are

not persuasive for the following reasons.

Applicant alleges " Hendel et al. does not disclose or suggest determining,

based on monitoring at least one of a source address or destination address in packets

destined for or received from the second network device, whether a communication

pattern exists". Examiner respectfully disagrees, because Hendel discloses monitoring

plurality of packets arriving at a port and determines whether a communication

pattern(i.e., when a first packet with a source address is seen, then follows packets with

same source address for a period of time, then it is determined a communication pattern

exist i.e., the packets are transmitted from same source address) [see col. 6, line 66 to

col. 7, lines 5].

As per applicant's argument "Hendel can not discloses automatically establishing

a trunk between the first network device and second network whether a communication

pattern is determined to exist". Examiner would like to point to the applicant another

section of Hendel where Hendel describes in order to increase capacity a number of

arbitrary links between two devices are connected to establish trunk (see fig. 5 and col.

4, lines 34-53 and col. 5, line 60 to col. 7, line 1). Furthermore, these trunks are

dynamically established as needed basis depending on the bandwidth requirement.

Furthermore, although Hendel does not explicitly discloses deactivating at least one

trunk when the communication pattern is determined to no longer exist. One skilled in

the art would readily recognized these arbitrarily established trunks can be deactivated

when bandwidth requirement no longer exist. Examiner relied on Friedman to show

trunks can be deactivated (i.e., removed from participating a trunk) based upon

predetermined criteria such as suggested by Friedman or the predetermined criteria

might obviously include bandwidth requirement of the trunk.

Claim Rejections 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-6, 8-11, 14-15 and 17 are rejected under 35 U.S.C. 102(e) as being

anticipated by Hendel et al. U.S. Patent No. 6,591,303[hereinafter Hendel].

As to claim 1, Hendel discloses a method for establishing a trunk (630) between first

(610) and second network devices (620), comprising:

- monitoring (i.e., inspecting or checking) via the first network device (i.e., the

    switch 620 as illustrated in fig. 6b) at least one of a source address and

    destination address in packets destined for or received from the second network

    device (i.e., the server 610 as illustrated in fig. 6b) (see figs. 6a-6d and col. 6,

    lines 42-66, where the end-node such as switch 620 inspects the header of each

data packet, the header includes sources and destination addresses of the data

packets);

- determining based on the monitoring, whether a communication pattern exists

    (i.e., determining a pattern at the time the first packet with the source address is

    seen and the time after the source address goes unseen for a period of time)

    [see col. 6, line 66 to col. 7, lines 5]; and

- automatically establishing the trunk between the first network device and

    second network device when the communication pattern is determined to exist

    (i.e., dynamically mapping or selecting based on determined source address to

    one of the trunk 630 having two more interfaces) [see fig. 6b and col. 6, lines 21-

    29 and line 60 to col. 7, line 5].

As to claim 2, Hendel discloses the method of claim 1 wherein the determining whether

a communication pattern exists includes:

detecting a predetermined number of packets having identical source or

destination addresses (i.e., same source address)[see col. 7, lines 2-5].

As to claim 3, Hendel discloses the method of claim 2 wherein the detecting occurs over

a predetermined period of time [see col. 7, lines 2-5].

As to claim 4, Hendel discloses the method of claim 1 wherein the first network device
includes a multi-port switch (620) and the second network device includes a server
(610) [see fig. 6b and col. 5, lines 24-26].

As to claim 5, Hendel discloses the method of claim 1 wherein automatically
establishing the trunk includes:

automatically establishing two or more trunks between the first network device

and second network device [see fig. 6a and col. 5, lines 59 to col. 6, line 1].

As to claim 6, Hendel discloses the method of claim 1 wherein automatically

establishing the trunk includes:

assigning at least two ports on the first network device to the trunk [see fig. 6a and 6c

and col. 5, lines 47-49 and lines 59-66].

As per claim 8, Hendel discloses s system for establishing at least one trunk (trunked

segments 631-633) between a first network device (switch 620) and a second network

device (server 610), comprising:

- means for monitoring (i.e., inspecting or checking) at least one of traffic (i.e.,

    stream of data packets) to the second network device (server 610) and traffic

    from the second network device [see fig. 6b and col. 6, lines 42-66, where stream

    of data packets to and from   server 610 to another is inspected];

- means for determining, based on the monitoring, if a communication pattern (i.e., determining a pattern at the time the first packet with the source address is seen and the time after the source address goes unseen for a period of time) [see col. 6, line 66 to col. 7, lines 5]; and

- means for automatically establishing the at least one trunk between the first network device and the second network device when a communication pattern is determined to exist (i.e., dynamically mapping or selecting based on determined source address to one of the trunk 630 having two more interfaces) [see fig. 6b and col. 6, lines 21-29 and line 60 to col. 7, line 5].

As per claim 9, Hendel discloses the system of claim 8 wherein the means for determining if a communication pattern exists includes:

means for detecting a predetermined number of packets having identical source or destination addresses [see col. 7, lines 2-5].

As per claim 10, Hendel discloses the system of claim 8 wherein the first network device includes a multi-port switch and the second network device includes a server (610) [see fig. 6b and col. 5, lines 24-26].

As per claim 11, Hendel discloses the system of claim 8 wherein the means for automatically establishing the at least one trunk comprises:

means for associating two or more ports of the first network device with each of

the at least one trunk [see fig. 6a and 6c and col. 5, lines 47-49 and lines 59-66].

As per claim 14, Hendel discloses a network device (switch 620) comprising:

- a receiver (network interface 403) configured to receive packets having a source

    address and a destination address(see col. 6, lines 42-66, where the header of

    received packets is checked, the header includes source address and

    destination address); and

- an internal rules checker configured to monitor the received source and

    destination addresses in the received packets (i.e., cache used by an end-node

    such as switch 620 to keep track of recently source destination addresses of

    packets) [see col. 6, lines 42-59, where stream of data packets from one end-

    node to another end-node is inspected],

    determine whether a communication pattern exists over a predetermined period

    of time (i.e., at the time the first packet with the source address is seen and the

    time after the source address goes unseen for a period of time) [see col. 6, line

    66 to col. 7, lines 5], and establish one or more trunks (i.e., trunks 631-633)

    between the network device (switch 620) and at least one other network device

    (server 610) in response to determining that a communication pattern exists [see

    fig. 6b col. 6, lines 21-29 and lines 59-66].

As to claim 15, Hendel discloses the network device of claim 14 wherein, when

determining whether a communication pattern exists, the internal rules checker is

configured to:

detect a predetermined number of packets having identical source or destination

addresses over the predetermined period of time [see col. 7, lines 2-5].

As to claim 17, Hendel discloses the network device of claim 14 wherein, when

establishing the one or more trunks, the internal rules checker is configured to:

assign at least two ports on the network device to each trunk [see fig. 6a and 6c and

col. 5, lines 47-49 and lines 59-66].

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 7, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Hendel as applied to claims 1, 8 and 14 discussed above, and further in view of

Friedman et al., U.S. patent No. 5,949,788[hereinafter Friedman].

As per claim 7, Hendel discloses substantial features of the claimed invention as

discussed above with respect to claim 1, including establishing or selecting a trunk

between a first network device and second network device when the communication

pattern (i.e., receiving number of packets with same source or destination address for

certain period of time), and wherein the trunk consist two or more interfaces depending

on the bandwidth requirement [see col. 59-67 and col. 7, lines 2-5].

Hendel, is silent regarding:

> deactivating the trunk when the communication pattern is determined to no
>
> longer exist and reassigning the ports to new trunks if a new pattern is
>
> determined.

Friedman, in analogous art discloses method that permits multipoint trunking among

plurality of devices connected by trunking comprising at least two physical links. In

addition, Friedman teaches a trunking technique and apparatus that permit the

bandwidth of the trunk to be increased in increments through the addition of links to the

trunk or deactivating the trunk depending on the bandwidth requirement and reassigning

the ports [see col. 10, lines 39-47]. Furthermore, Hendel teaches creating parallel

trunking of interfaces to increase transfer bandwidth between network devices, wherein

the number of interfaces that are implemented may be any number greater than two

depending on the bandwidth requirement . Hence, deactivating the trunk and

reassigning ports to a new trunk would be beneficial to Hendel's system in order to

accommodate the bandwidth requirement of more network devices. Therefore, it would

have been obvious to one having ordinary skill in the art at the time of the invention to

deactivate the trunk when the communication pattern is determined to no longer exist

and reassigns ports to new trunks if a is new pattern is determined as taught by

Friedman in order to maximize the bandwidth of the trunk and to assure that the

maximum realizable bandwidth is available to the greatest number of connected

network devices [see col. 3, line 65 to col. 4, line5).

As per claim 13, Hendel discloses substantial features of the claimed invention as

discussed above with respect to claim 8, including establishing or selecting a trunk

between a first network device and second network device when the communication

pattern (i.e., receiving number of packets with same source or destination address for

certain period of time), and wherein the trunk consist two or more interfaces depending

on the bandwidth requirement (see col. 59-67 and col. 7, lines 2-5).

Hendel, is silent regarding:

> means for deactivating the at least one trunk when the communication pattern is
>
> determined to no longer exist.

Friedman, in analogous art discloses method that permits multipoint trunking among

plurality of devices connected by trunking comprising at least two physical links. In

addition, Friedman teaches trunking technique and apparatus that permit the bandwidth

of the trunk to be increased in increments through the addition of links to the trunk or

deactivating the trunk depending on the bandwidth requirement and reassigning the port

[see col. 10, lines 39-47]. Furthermore, Hendel teaches creating parallel trunking of

interfaces to increase transfer bandwidth between network devices, wherein the number

of interfaces that are implemented may be any number greater than two depending on

the bandwidth requirement. Hence, deactivating and reassigning ports to new trunk

would be beneficial to Hendel's system in order to accommodate the bandwidth

requirement of more network devices. Therefore, it would have been obvious to having

ordinary skill in the art at the time of the invention to deactivate the trunk when the

communication pattern is determined to no longer exist as taught by Friedman in order

to maximize the bandwidth of the trunk and to assure that the maximum realizable

bandwidth is available to the greatest number of connected network devices [see col. 3,

line 65 to col. 4, line5).

As per claim 16, Hendel discloses substantial features of the claimed invention as

discussed above with respect to claim 14, including an internal rules checker (i.e., an

end-node that monitors or inspects source and destination addresses of the received

packets).

Hendel, is silent regarding:

deactivating the one or more trunks when the communication pattern is

determined to no longer exist.

Friedman, in analogous art discloses method that permits multipoint trunking among

plurality of devices connected by trunking comprising at least two physical links. In

addition, Friedman teaches a trunking technique and apparatus that permits the

bandwidth of the trunk to be increased in increments through the addition of links to the

trunk or deactivating the trunk depending on the bandwidth requirement]see col. 10,

lines 39-47]. Furthermore, Hendel teaches creating parallel trunking of interfaces to

increase transfer bandwidth between network devices, wherein the number of interfaces

that are implemented may be any number greater than two depending on the bandwidth

requirement . Hence, deactivating the one or more trunks when the communication

pattern is determined to no longer exist would be beneficial to Hendel's system in order

to accommodate the bandwidth requirement of more network devices. Therefore, it

would have been obvious to having ordinary skill in the art at the time of the invention to

deactivate the one or more trunks when the communication pattern is determined to no

longer exist as taught by Friedman in order to maximize the bandwidth of the trunk and

to assure that the maximum realizable bandwidth is available to the greatest number of

connected network devices [see col. 3, line 65 to col. 4, line5].

7.   Claims 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Hendel as applied to claims 11 and 14 discussed above, and further in view of

Annaamalai et al., U.S. patent No. 6,445,715[hereinafter Annaamalai].

As per claim 12, Hendel discloses substantial features of the claimed invention as

discussed above with respect to claim 11, means for associating two or more ports of

the first network device with each of at least one trunk [see fig. 6a and 6c and col. 5,

lines 47-49 and lines 59-66].

Hendel is silent regarding:

        means for associating one or more trunk control bits with each port, the trunk

        control bits indicating status of a port.

Annaamalai, discloses a system for dynamic control or administration of status of trunks

using trunk operational status (TOS) information having a format, wherein the TOS field

is 3-bit field whose contents specify the status mode of a port [see col. 8, lines 15-23].

Furthermore, associating one or more trunk control bits to indicate the status of trunk

ports would be advantageous to Hendel's system in order to indicate present

operational trunk status of the port. Therefore, it would have been obvious to one having

ordinary skill in the art at the time of the invention to associate one or more trunk control

bits with each port, where the trunk control bits indicate the status of the port, because it

is desirable to specify current operational trunk status of the port to show whether a port

is in use, failed or active in order to respond port initiation request.

As per claim 18, Hendel discloses substantial feature of the claimed as discussed

above with respect to claim 14, including at least one register configured to store

trunking information (a cache or look up table for storing information about each

interface) [see col. 6, lines 42-59] wherein, when establishing the one or more trunks

the internal rules checker (the end-node that inspects the data packet) selects one or

more trunks based on communication pattern.

Hendel is silent regarding:

the internal rules checker sets at least one bit in the at least one register.

Annaamalai, discloses a system for dynamic control or administration of status of trunks

using trunk operational status (TOS) information having a format 420, wherein the TOS

field is 3-bit field whose contents specify the status mode of a port (see fig.3 col. 6, lines

47-55 and col. 8, lines 15-23). Furthermore, associating one or more trunk control bits to

indicate the status of trunk ports would be advantageous to Hendel's system in order to

indicate present operational trunk status of the port. Therefore, it would have been an

obvious to one having ordinary skill in the art at the time of the invention to set at least

one bit in the at least one register, because it is desirable to specify current operational

trunk status of the port to show whether a port is in use, failed or active in order to

respond port initiation request.

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

a) Lakhani et al., U.S. Patent No. 6,721,322. Provides a system for establishing

dynamic high usage trunk groups for dynamically provisioning high usage trunks

between end nodes.

b) Kadambi et al., U.S. Patent No. 6,104,696. Provides a method for sending packets between ports on trunked network switches.

c) Jennings et al., U.S. Patent No. 6,463,479. Provides an apparatus for trunking network communications between network devices.

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salad E Abdullahi whose telephone number is 703-308-8441. The examiner can normally be reached on 8:30 - 5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 703-305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).
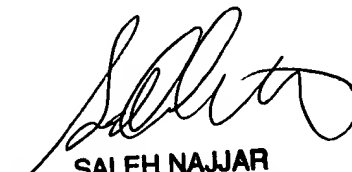
Any response to this action should mailed to:
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                or faxed to: (703) (872-9306)

Abdullahi Salad
Examiner AU 2157
10/15/2004

SALEH NAJJAR
PRIMARY EXAMINER